

I Claim:

1. A method for the ultrasound measuring of layer thicknesses in cladding tubes for nuclear fuel, which comprises:

providing a high-frequency probe with a coupling surface having a planar surface region;

wetting the tube with a coupling medium; and

coupling the planar surface region with a wetted surface of the tube by a contact technique.

2. The method according to claim 1, wherein the coupling surface has an overall planar shape.

3. The method according to claim 1, wherein the coupling surface is substantially planar over its entire surface.

4. The method according to claim 1, which further comprises recording echo signals received by the probe in digital form and improving a signal/noise ratio of the recorded digital echo signals by digitally processing the recorded digital echo signals.

5. The method according to claim 1, which further comprises digitally recording echo signals received by the probe and

digitally processing the recorded digital echo signals to improve a signal/noise ratio of the recorded digital echo signals.

6. The method according to claim 1, which further comprises carrying out the tube wetting step by wetting a tube having a wall thickness no greater than 1 mm.

7. The method according to claim 1, which further comprises measuring a thickness of a liner layer of a nuclear fuel cladding tube selected from the group consisting of an inner liner layer and an outer liner layer, the thickness of the liner layer being approximately 0.15 mm.

8. A method for the ultrasound measuring of layer thicknesses, which comprises:

providing a high-frequency probe with a coupling surface having a planar surface region;

wetting a nuclear fuel cladding tube with a coupling medium;

coupling the planar surface region with a wetted surface of the cladding tube by a contact technique; and

measuring a thickness of a liner layer of the cladding tube.

9. The method according to claim 8, which further comprises carrying out the measuring step by measuring a thickness of a liner layer of the cladding tube selected from the group consisting of an inner liner layer and an outer liner layer.
10. The method according to claim 9, wherein the thickness of the liner layer is approximately 0.15 mm.
11. The method according to claim 8, wherein the coupling surface has an overall planar shape.
12. The method according to claim 8, wherein the coupling surface is substantially planar over its entire surface.
13. The method according to claim 8, which further comprises recording echo signals received by the probe in digital form and improving a signal/noise ratio of the recorded digital echo signals by digitally processing the recorded digital echo signals.
14. The method according to claim 8, which further comprises digitally recording echo signals received by the probe and digitally processing the recorded digital echo signals to improve a signal/noise ratio of the recorded digital echo signals.

15. The method according to claim 8, which further comprises carrying out the tube wetting step by wetting a tube having a wall thickness no greater than 1 mm.

16. A method for the ultrasound measuring of layer thicknesses in cladding tubes for nuclear fuel, which comprises:

coupling, by a contact technique, a planar surface region of a coupling surface of a high-frequency probe with a tube surface wetted with a coupling medium.

17. The method according to claim 16, wherein the coupling surface has an overall planar shape.

18. The method according to claim 16, wherein the coupling surface is substantially planar over its entire surface.

19. The method according to claim 16, which further comprises recording echo signals received by the probe in digital form and improving a signal/noise ratio of the recorded digital echo signals by digitally processing the recorded digital echo signals.

20. The method according to claim 16, which further comprises digitally recording echo signals received by the probe and digitally processing the recorded digital echo signals to improve a signal/noise ratio of the recorded digital echo signals.

21. The method according to claim 16, which further comprises carrying out the tube wetting step by wetting a tube having a wall thickness no greater than 1 mm.

22. The method according to claim 16, which further comprises measuring a thickness of a liner layer of a nuclear fuel cladding tube selected from the group consisting of an inner liner layer and an outer liner layer, the thickness of the liner layer being approximately 0.15 mm.